

LFI

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MAY



LEICA FOTOGRAFIE INTERNATIONAL

IN UNIFORM

BONDAGE,
FETISHISM OR
FANCY DRESS?

CUSTOMER SERVICE

INSPECTION
CERTIFICATES
FOR USED
LEICA CAMERAS

DIGITAL MODULE R

IMACON FOUNDER
C. POULSEN AND
THE SECRET OF THE
LEICA SENSOR



FINISHING TOUCHES

Leica's Digital Module R is nearly ready for the market. The digital back prototypes developed by Danish specialist Imacon are being thoroughly tested. We paid them a visit and got an idea of the present state of affairs.

BY HOLGER SPARR



The internal picture optimisation program still lacks several routines, but in front of the test chart the Digital Module R gives off a good figure

Under normal circumstances, M and R users get along well, but occasionally a bit of jealousy cannot be avoided when peeking into each others camp. Only recently viewfinder fans got the fortunate news that Leica intends to present them with a digital M, without failing to mention that, unfortunately, they will have to hang in there another two years. R users' long wait is almost

over, as Leica will be introducing the Digital Module R in time for photokina this September. The prototype was almost complete in February when we last visited the Danes at Imacon, who are developing the digital back for Leica. In the meanwhile, Solms is busy producing picture samples. To date the prototypes were anything but fully functional digital cameras, as several internal image optimisation functions were still lacking. Furthermore, the moiré correction and the automatic white balance were not working. The many photographers dying to get their hands on the new camera will have to continue practicing their patience, as the prototypes are simply not ready – alas, this issue will not present pictures taken with an R Digital. Instead, the combination camera and back unit has to continue proving its performance by means of test charts and climate chambers.

However, we are already convinced by the way it handles. The digital R8 or R9 feels like its analogue counterpart with mounted motor drive, and the digital control elements are intuitive. You pick up the modified Leica R, take a few pictures, and it feels like you have never done anything else in your life. This is due to careful and well thought-out planning, not forgetting the successful interplay between development partners Kodak and Imacon. Kodak's CCD chip was the base for all further procedures and had to be completed at an early stage (see LFI 8/2003). Then Imacon went to work – not only developing but also manufacturing the Digital Module R.

EXACT COLOURS

The Danes are renowned for developing and producing the high-quality FlexTight scanners, which, with their internal CCD sensors, rank them among drum scanners. Furthermore, they build the

Ixpress digital back units for medium-format cameras. Just like the Digital Module R, they run on Kodak's expert CCD chips. Imacon head and founder, Christian Poulsen, relies on years of experience with CCD technology, and the company itself holds several patents for its efficient usage.

How could Leica miss out on such vast knowledge for their digital R unit? During our visit in February, Poulsen elaborated on the special challenges for the development of the Digital Module R (see our interview on the next page). Imacon had a large influence on the construction of the CCD converter, like when it came to choosing the excellent colour and infrared band elimination filters. According to Christian Poulsen, they have a major effect on the sensor's capacity to tell colours apart. This makes the exclusive Leica sensor relatively expensive, but it brings along the capability of recognising colours much more accurately than many other digital cameras.

COOL SENSORS

The experiences with medium format back units and their customers, who are hard to please in terms of sharpness, pushed Imacon to exclude an anti aliasing filter against moiré and to 'fake it' by means of software. This concept, perfected throughout the years, now compliments the digital module for the Leica R – with the advantage over Imacon's Ixpress back units that the moiré filtering takes place directly on its digital signal processor. According to Christian Poulsen, it is the fastest and best of its kind for an acceptable price. Furthermore, it is the only one capable of storing a complete picture – colour corrected and moiré-free – within fractions of a second on the memory card. Above all the Danes are absolute leaders

when it comes to avoiding picture noise. Their trick is to keep the sensors cool: "Noise doubles every 7 to 10 degrees of increased sensor temperature," says Christian Poulsen. "There are two ways of reducing this problem: the chip is either actively cooled, which is next to impossible in a portable camera, or one ensures that it doesn't get hot in the first place, which we achieve by means of intelligent current regulation." The recipe for this sounds easy, but technically the procedure is highly complex: the sensor uses as little electricity as possible, and this only imminently before the exposure. The Danes own further patented techniques for interpreting the picture signals, in order to shrink the chip's appetite for energy and to keep it cool. According to Christian Poulsen, even Kodak is impressed with their methods and results. Together with the Digital Module R, this technology enters the realm of 35 mm photography for the first time ever.

THE FINISHING STAGES

Ever-improving prototypes are currently travelling from Copenhagen to Leica in Solms at ever-shorter intervals, and the devices are being methodically checked and optimised. The quality assurance phase takes a lot of time, as the Digital Module R needs to be fully functional and achieving the ideal quality expected from Leica, market-ready for December of this year.

The present prototypes prove that things are going as planned, since Leica is already extremely satisfied with the sharpness and resolution of the first test samples. The only thing lacking is plenty of fine-tuning. Without a shadow of a doubt, Leica and its Digital Module R will enrich the scene with an extremely powerful digital camera.



LEICA DIGITAL-MODULE-R: Images of the first Working-Sample



Opened Digital Back with view of sensor, power unit in background



Large lighted LC display with multifunctional setting element



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The LEICA DIGITAL-MODULE-R in play mode



On the frontside of the set, the only way of recognizing it as a digital product is through the engraving "DIGITAL-MODULE-R"